

20A, 20V - 150V Schottky Barrier Rectifier

FEATURES

- AEC-Q101 qualified available
- Low power loss, high efficiency
- Guard ring for overvoltage protection
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

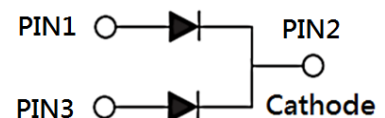
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- DC to DC converters

MECHANICAL DATA

- Case: ITO-220AB
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	20	A
V_{RRM}	20 - 150	V
I_{FSM}	200	A
T_{JMAX}	125, 150	°C
Package	ITO-220AB	
Configuration	Dual dies	


ITO-220AB


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SRF 2020	SRF 2030	SRF 2040	SRF 2050	SRF 2060	SRF 2090	SRF 20100	SRF 20150	UNIT
Marking code on the device		SRF 2020	SRF 2030	SRF 2040	SRF 2050	SRF 2060	SRF 2090	SRF 20100	SRF 20150	
Repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	90	100	150	V
Reverse voltage, total rms value	$V_{R(RMS)}$	14	21	28	35	42	63	70	105	V
Forward current	I_F	20								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200								A
Junction temperature	T_J	-55 to +125				-55 to +150				°C
Storage temperature	T_{STG}	-55 to +150								°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case thermal resistance	$R_{\theta JC}$	1.5	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT			
Forward voltage per diode ⁽¹⁾	SRF2020 SRF2030 SRF2040	$I_F = 10\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.55	V			
	SRF2050 SRF2060			-	0.70	V			
	SRF2090 SRF20100			-	0.92	V			
	SRF20150			-	1.02	V			
Reverse current @ rated V_R per diode ⁽²⁾	SRF2020 SRF2030 SRF2040 SRF2050 SRF2060	$T_J = 25^\circ\text{C}$	I_R	-	500	μA			
	SRF2090 SRF20100 SRF20150			-	100	μA			
	Reverse current @ rated V_R per diode ⁽²⁾			SRF2020 SRF2030 SRF2040	$T_J = 100^\circ\text{C}$	I_R	-	15	mA
				SRF2050 SRF2060			-	10	mA
SRF2090 SRF20100 SRF20150		-	-	mA					
Reverse current @ rated V_R per diode ⁽²⁾	SRF2020 SRF2030 SRF2040 SRF2050 SRF2060	$T_J = 125^\circ\text{C}$	I_R	-	-	mA			
	SRF2090 SRF20100 SRF20150			-	5	mA			

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾⁽²⁾	PACKAGE	PACKING
SRF20x	ITO-220AB	50 / Tube
SRF20xH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 20V(SRF2020) to 150V(SRF20150)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

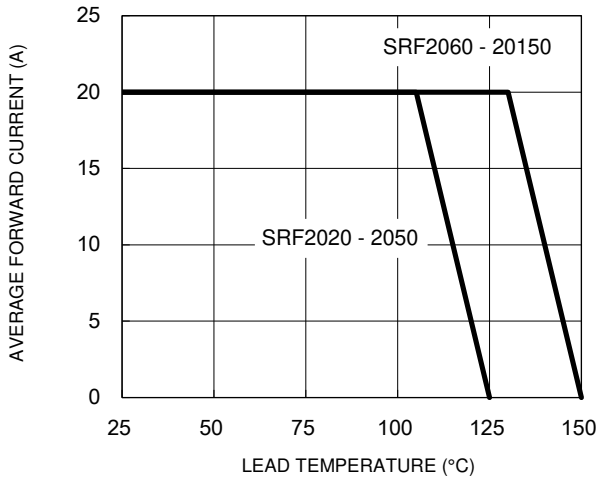


Fig.2 Typical Junction Capacitance

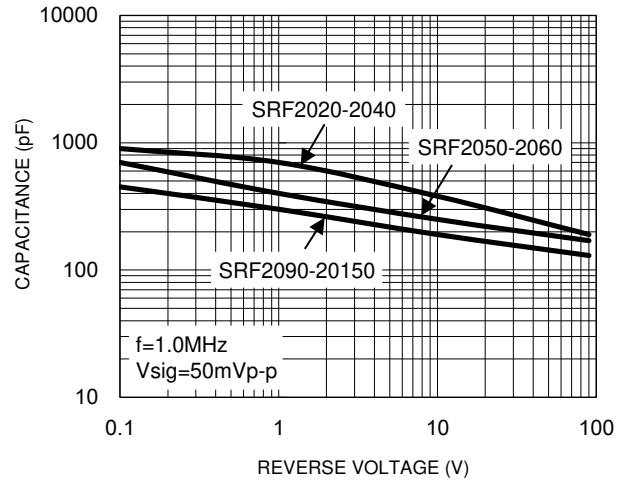


Fig.3 Typical Reverse Characteristics

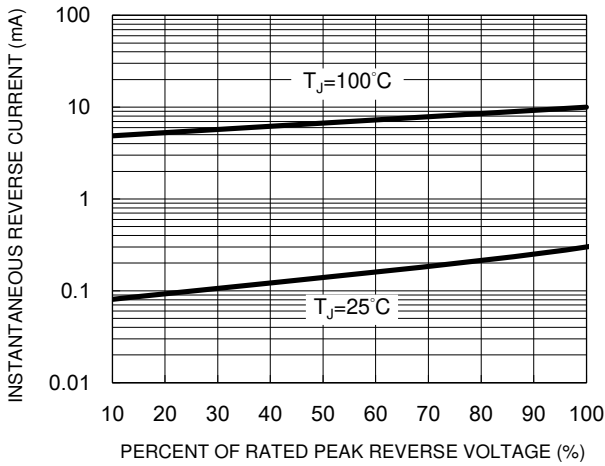


Fig.4 Typical Forward Characteristics

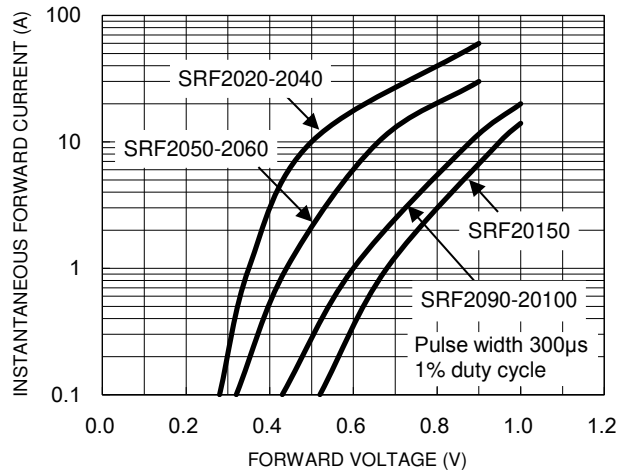
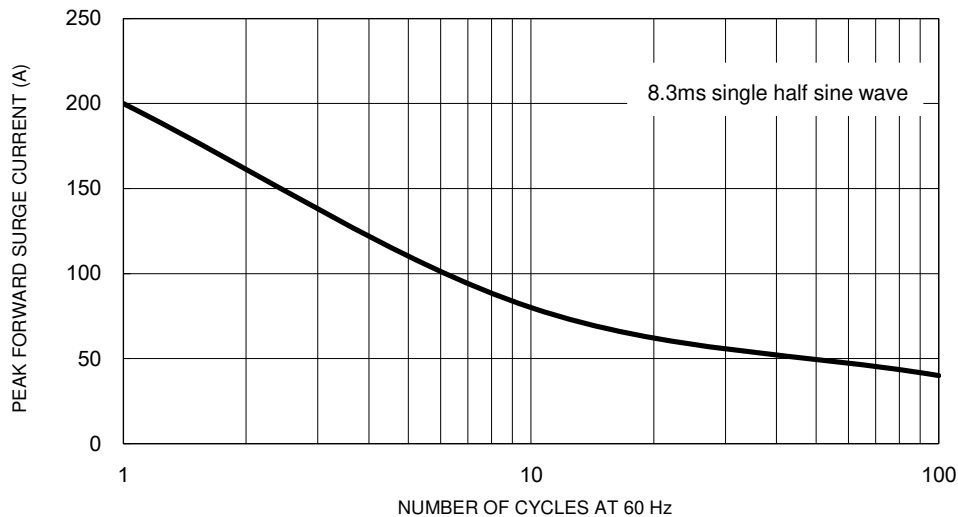


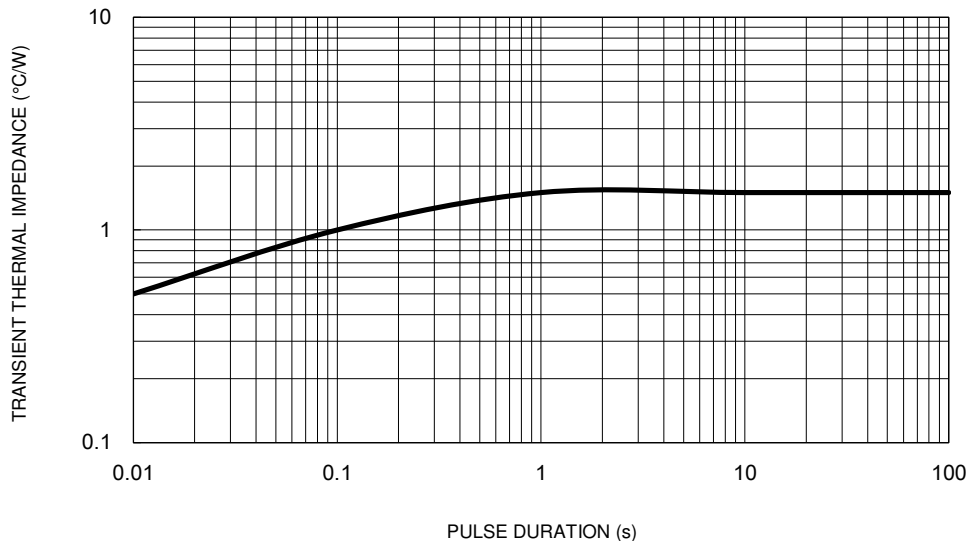
Fig.5 Maximum Non-Repetitive Forward Surge Current



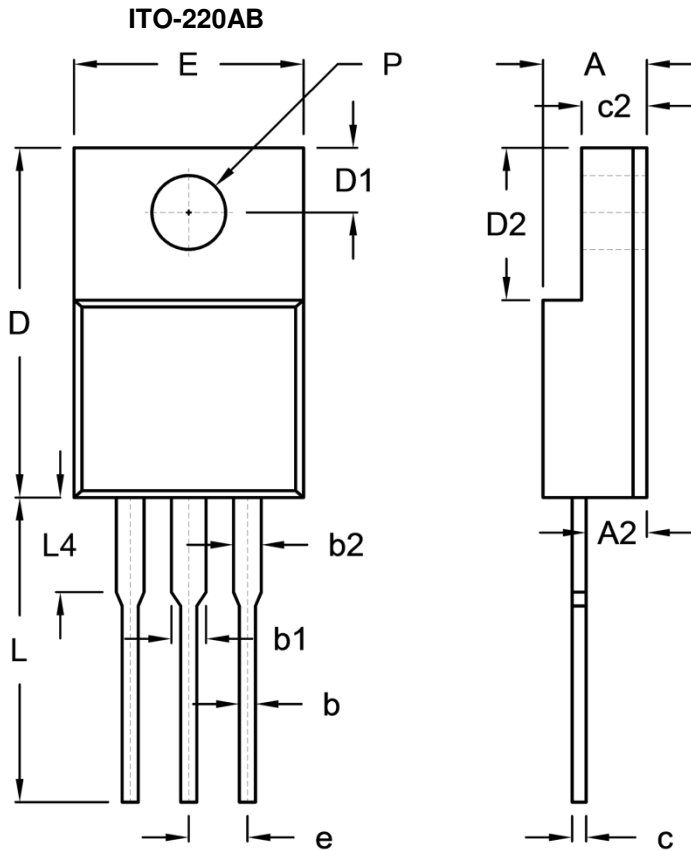
CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.96	0.091	0.117
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
c	0.46	0.76	0.018	0.030
c2	2.50	3.16	0.098	0.124
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

MARKING DIAGRAM



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

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